Instrumentation and Fabrication

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The CXRO mechanical technician team provides a uniquely diverse group of skill sets to the CXRO scientific community in a combined effort to make a scientific theory a physical reality.
The technical team specializes in very sophisticated ultra-high vacuum (UHV) systems. The UHV systems include component design, fabrication, precision electro-mechanical assemblies, computerized electronic motion control systems, UHV vacuum chambers and vacuum equipment, installation and commissioning of state-of-the-art micro-mechanical systems such as monochromators and photo emission spectrometers.
The engineering technical team has built and commissioned five UHV beam lines located at the Advance Light Source: X-ray Microscopy, EUVL Defect Inspection, EUVL Interferometry and Optical testing, and two X-ray Calibrations and Standards beam lines. These state-of-the-art beam lines are designed to operate at peak performance twenty-four hours a day seven days a week while accommodating researchers and their experimental end stations.
Capabilities of the technical team include but are not limited to the fabrication of specialized beamline components including: Design & Fabrication, Optimization of vacuum equipment, Cryogenics, Custom electronic circuitry and instrumentation, Creation of in-vacuum cameras and controls, optical mirror coatings, vital mirror bending systems, Custom UHV vacuum chambers, Specialized survey and alignment applications, Computer aided design (CAD), Welding, and a fully equipped precision machining facility.